

WHAT IS CLAIMED IS:

1. A non-round base structure for a blow-molded container having rectangular sidewalls, comprising:

 a support heel comprising a flexible vacuum absorbing area and having a bearing edge and an outer portion and an inner portion, said outer portion merging with the container rectangular sidewalls and said inner edge merging with a central concave wall;

 the central concave wall having an apex and a plurality of ribs extending outward from the apex along the concave surface, each rib having a rounded edge extending outward from the interior of the container; and

 whereby the vacuum absorbing area and ribs cooperate to enhance the structural integrity of the container by rigidifying said central concave wall and by providing multiple paths of interengageable surfaces that make it difficult for deflection, once initiated, to propagate to undesired distortion.

2. The non-round base structure for a blow-molded container of claim 1, wherein the flexible vacuum absorbing area is roughly ellipsoidal in shape.

3. The non-round base structure for a blow-molded container of claim 2, wherein the flexible vacuum absorbing area enhances the support bearing edge upon container filling.

4. The non-round base structure for a blow-molded container of claim 2, wherein the flexible area does not exceed a 25% difference in cord length.

5. The non-round base structure for a blow-molded container of claim 4, wherein the cords are measured from the inside edge to the outside edges of the area.

6. The base structure according to claim 1, wherein the ribs form a substantially symmetric array.

7. The base structure according to claim 6, wherein the array is substantially star-shaped.

8. The base structure according to claim 1, wherein there are at least about six ribs.

9. The base structure of claim 1, wherein the vacuum flexible area partially surrounds the area defined by the concave surface.

10. The base structure of claim 9, wherein the vacuum flexible area is separated into two roughly symmetrical areas by recessed structures on opposite sides of the concave surface.

11. A base structure according to claim 1, wherein said base structure comprises polyethylene terephthalate.

12. A non-round base structure for a blow-molded container having rectangular sidewalls, comprising:

a support heel comprising a flexible vacuum absorbing area and having a bearing edge and an outer portion and an inner portion, said outer portion merging with the container rectangular sidewalls and said inner edge merging with a central concave wall, wherein said flexible vacuum absorbing area comprises a substantially ellipsoid shape;

the central concave wall having an apex and a plurality of ribs extending outward from the apex along the concave surface, each rib having a rounded edge extending outward from the interior of the container; and

whereby the vacuum absorbing area and ribs cooperate to enhance the structural integrity of the container by rigidifying said central concave wall and by providing multiple paths of interengageable surfaces that make it difficult for deflection, once initiated, to propagate to undesired distortion.

13. The non-round base structure for a blow-molded container of claim 12, wherein the flexible vacuum absorbing area enhances the support bearing edge upon container filling.

14. The non-round base structure for a blow-molded container of claim 12, wherein the flexible area does not exceed a 25% difference in cord length.

15. The non-round base structure for a blow-molded container of claim 14, wherein the cords are measured from the inside edge to the outside edges of the area.

16. The base structure according to claim 12, wherein the ribs form a substantially star-shaped, symmetric array.

17. The base structure of claim 12, wherein the vacuum flexible area partially surrounds the area defined by the concave surface.

18. The base structure of claim 17, wherein the vacuum flexible area is separated into two roughly symmetrical areas by recessed structures on opposite sides of the concave surface.

19. A base structure according to claim 12, wherein said base structure comprises polyethylene terephthalate.

20. A non-round base structure for a blow-molded container having rectangular sidewalls, comprising:

a support heel comprising a flexible vacuum absorbing area and having a bearing edge and an outer portion and an inner portion, said outer portion merging with the container rectangular sidewalls and said inner edge merging with a central concave wall, wherein the flexible vacuum absorbing area is roughly ellipsoidal in shape adapted to enhance the support bearing edge upon container filling that does not exceed about a 25% difference in cord length;

the central concave wall having an apex and a plurality of ribs extending outward from the apex along the concave surface to form a substantially star-shaped symmetric array, each rib having a rounded edge extending outward from the interior of the container; and

whereby the vacuum absorbing area and ribs cooperate to enhance the structural integrity of the container by rigidifying said central concave wall and by providing multiple paths of interengageable surfaces that make it difficult for deflection, once initiated, to propagate to undesired distortion.